

Project Information Form

Project Title	Do California Highways Act as Barriers to Gene Flow for Ground-Dwelling Mammals?
University	UC Davis
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Funding Source(s) and Amounts Provided (by each agency or organization)	Caltrans \$78,395
Total Project Cost	\$78,395
Agency ID or Contract Number	DTRT13-G-UTC29
Start and End Dates	September 1, 2014 – March 31, 2015
Brief Description of Research Project	Roads can act as significant barriers to wildlife dispersal, creating small fragmented populations at increased risk for genetic diversity loss and inbreeding. The magnitude of road impacts on wildlife populations depends on road characteristics and the species considered; therefore it is difficult to generalize results among systems. To begin to understand how Northern California highways affect native mammals, we propose to determine whether SR 50 and I-80 in the Sierra Nevada and I-680 and I-580 in the Bay Area act as barriers to coyote dispersal and gene flow. We will collect samples from road killed coyotes and non-invasive sources (hair and scat) on either side of each highway and use landscape genetic analyses to determine how genetic diversity is partitioned across these putative barriers. Population assignment tests will be used to infer the number of populations and identify migrants dispersing across highways. Spatial autocorrelation analyses will determine whether genotypes are distributed randomly in the landscape or are restricted by highway barriers. We expect our study will reveal significant patterns of coyote population subdivision on either side of major Northern California highways. Our results will assist agencies in developing mitigation plans

	to reduce the impact of transportation on native wildlife population.
Describe Implementation of Research Outcomes (or why not implemented) (Attach Any Photos)	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none"> • Reports • Project website 	http://ncst.ucdavis.edu/project/ucd-ct-to-009/